

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER NO. 94-017

SITE CLEANUP REQUIREMENTS FOR:

**PACIFIC ROD AND GUN CLUB; and CITY AND COUNTY OF SAN FRANCISCO
520 MUIR DRIVE, LAKE MERCED
CITY AND COUNTY OF SAN FRANCISCO**

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. **Site Description** - The Pacific Rod and Gun Club (hereinafter called the Discharger) is located on the west side of Lake Merced in San Francisco (see Figure 1) on about 14 acres of land, which is leased from the City and County of San Francisco. The club maintains skeet and trap ranges where shotguns are used to shoot lead pellets at clay targets. Pacific Rod and Gun Club is primarily responsible for this discharge. The City and County of San Francisco is secondarily responsible for purposes of this Order, and is hereinafter called the Secondarily Responsible Discharger.
2. **Site History** - The Discharger has operated the ranges for more than 70 years. The ranges are currently in operation four days a week.
3. **Sources of Pollution** - The lead pellets from the shotguns are discharged in a northeasterly direction and many are deposited into Lake Merced, a fresh water lake and a potential source of drinking water. The pellets can land a considerable distance, 300 to 400 feet, from the shooting positions. Based upon the number of shells fired in 1989, an estimate of the amount of lead discharged into the lake was about 27 tons per year. Lead has been successfully recovered from the lake on at least one occasion. During 1985-86, 128 tons of lead were retrieved. Broken clay targets are also deposited into the lake.
4. **Previous Investigations** - Two site investigations were conducted for both chemical and biological factors to determine the extent and quantity of lead in the lake sediments and the water column, and the quantity of lead in biota.

Results from the second investigation, conducted in 1992, showed that sediment lead concentrations, after removal of lead pellets, exceeded background (geometric mean of 143 vs. 39 mg/kg). Also, on-site lead concentrations in aquatic plants (coontail and tule) and fauna (bloodworms, clams and snails) exceeded background by one order of magnitude. One of the conclusions from the second investigation was "The benthic invertebrate infauna and other organisms at the site did not show obvious signs of adverse impacts from lead, relative to the entire Lake Merced ecosystem (i.e.

background levels)." Lead was not detected in the water column samples obtained during the first investigation, conducted in 1990.

The two investigations have adequately defined the lead pollution in the lake sediments. However, an additional biological study is required to determine whether a significant risk to the populations of resident and migratory waterfowl exists from the possible ingestion of lead pellets at the site.

5. **Environmental Concerns** - The two primary areas of concern are lead and clay target deposition. The potential effects of lead from shotgun clubs are well documented. Direct ingestion of lead pellets may cause waterfowl deaths. In the Lake Merced area, dabbling ducks are at special risk. Both the second investigation and a 1993 study prepared for the San Francisco Water Department concluded that waterfowl at Lake Merced may be susceptible to lead pellet ingestion. In both fresh and marine water, lead becomes available to biota through the transformation process of oxidation. Clay targets contain asphaltenes, which in turn can contain polynuclear aromatic hydrocarbons. Certain types of these hydrocarbons are classified as carcinogenic.
6. **Scope of this Order** - This Order contains tasks that require the Discharger to: 1) cease the deposition of lead into waters of Lake Merced; 2) determine the degree to which the populations of resident and migratory waterfowl are affected by the possible ingestion of lead pellets at the site; 3) to the extent necessary, develop a remedial action plan ; and 4) implement the remedial action plan, if necessary.
7. On October 28, 1968, the State Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affect beneficial uses.
8. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on September 16, 1992. The Basin Plan contains water quality objectives and beneficial uses for Lake Merced.
9. The existing and potential beneficial uses of Lake Merced include:
 - a. Municipal and domestic supply
 - b. Water contact recreation (fishing only)
 - c. Non-contact water recreation
 - d. Warm fresh water habitat

- e. Cold fresh water habitat
 - f. Wildlife habitat
 - g. Fish spawning
10. The Discharger has caused or permitted, or threatens to cause or permit, lead pellets and clay targets to be discharged or deposited where they are, or probably will be, discharged to waters of Lake Merced and creates, or threatens to create, a condition of pollution or nuisance.
 11. This action is an Order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.
 12. The Board has notified the Discharger and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge or threatened discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.
 13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Discharger shall cleanup and abate the effects described in the above findings as follows:

A. **PROHIBITION**

1. The discharge of wastes or hazardous materials in a manner which will degrade, or threaten to degrade, water quality or adversely affect, or threaten to adversely affect, the beneficial uses of the waters of Lake Merced is prohibited. Specifically, the discharge or deposition of lead pellets into waters of Lake Merced is prohibited.

B. **PROVISIONS**

1. The Discharger shall perform all investigation and cleanup work in accordance with the requirements of this Order. All technical reports submitted in

compliance with this Order shall be satisfactory to the Executive Officer, and, if necessary, the Discharger may be required to submit additional information.

2. To comply with all Prohibitions of this Order, the Discharger shall meet the following compliance task and time schedule. Within sixty (60) days of the Executive Officer's determination and actual notice to the Secondly Responsible Discharger that the Discharger has failed to comply with this Order, the Secondly Responsible Discharger, as landowner of the property, shall itself then be responsible for complying with this Order under a time schedule revised by the Executive Officer to reflect the status of task completion at the time of compliance failure.

COMPLIANCE DATE AND TASKS

- a. **COMPLIANCE DATE: March 1, 1994**

WORKPLAN FOR IMPLEMENTATION OF LEAD BAN: Submit a workplan acceptable to the Executive Officer containing a proposal, including a time schedule, for implementation of a ban on lead pellets and methods for enforcing this ban.

- b. **COMPLIANCE DATE: October 1, 1994**

CESSATION OF LEAD DEPOSITION: Discharger is prohibited from depositing lead pellets into waters of Lake Merced.

- c. **COMPLIANCE DATE: April 1, 1994**

WORKPLAN FOR ALTERNATIVES TO CLAY TARGETS THAT CONTAIN ASPHALT: Submit a workplan acceptable to the Executive Officer containing a proposal, including a time schedule, to investigate the use of alternatives to clay targets that contain asphalt. This workplan will not be necessary if the Discharger submits a letter acceptable to the Executive Officer stating that the use of shotguns is permanently banned at Lake Merced.

- d. **COMPLIANCE DATE: June 1, 1994**

WORKPLAN FOR BIOLOGICAL CHARACTERIZATION: Submit a technical report acceptable to the Executive Officer containing a proposal, including a time schedule, to characterize the risk to the

populations of resident and migratory waterfowl from ingestion of lead pellets at the site. A remedial action plan acceptable to the Executive Officer may be submitted in lieu of this workplan for biological characterization.

- e. **COMPLIANCE DATE: To be established by Executive Officer based on proposal submitted pursuant to Provision 2.d.**

COMPLETION OF BIOLOGICAL CHARACTERIZATION:

Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report acceptable for Provision 2.d.

- f. **COMPLIANCE DATE: To be established by Executive Officer based on report submitted pursuant to Provisions 2.e.**

REMEDIAL ACTION PLAN: Submit a technical report acceptable to the Executive Officer containing a remedial action plan and an implementation time schedule. This report shall evaluate the need for removal and/or management (for example, periodic monitoring) of lead deposits in the lake and, possibly, the adjacent land or wetland areas. Remedial action evaluation shall consider pellet and sediment lead concentrations, and shall be based on biological data, including the study required by Provision 2.d., the investigations described in Finding 4, and other available information.

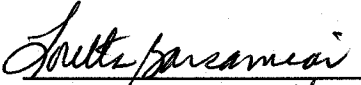
- g. **COMPLIANCE DATE: To be established by Executive Officer based on proposal submitted pursuant to Provision 2.f.**

COMPLETION OF REMEDIAL ACTION: Submit a technical report acceptable to the Executive Officer documenting the completion of the necessary tasks identified in the technical report acceptable for Provision 2.f.

- 3. If the Discharger is delayed, interrupted or prevented from meeting one or more of the compliance dates specified in this Order, the Discharger shall promptly notify the Executive Officer, and the Board may consider revision to this Order.

4. The Discharger shall file a report with the Board at least 30 days in advance of any changes in occupancy or ownership associated with the Site described in this Order.
5. The Board will review this Order periodically and may revise the requirements or compliance schedule when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Region, on January 19, 1994.


Steven R. Ritchie
Executive Officer

Attachments: Figure 1 — Site Map

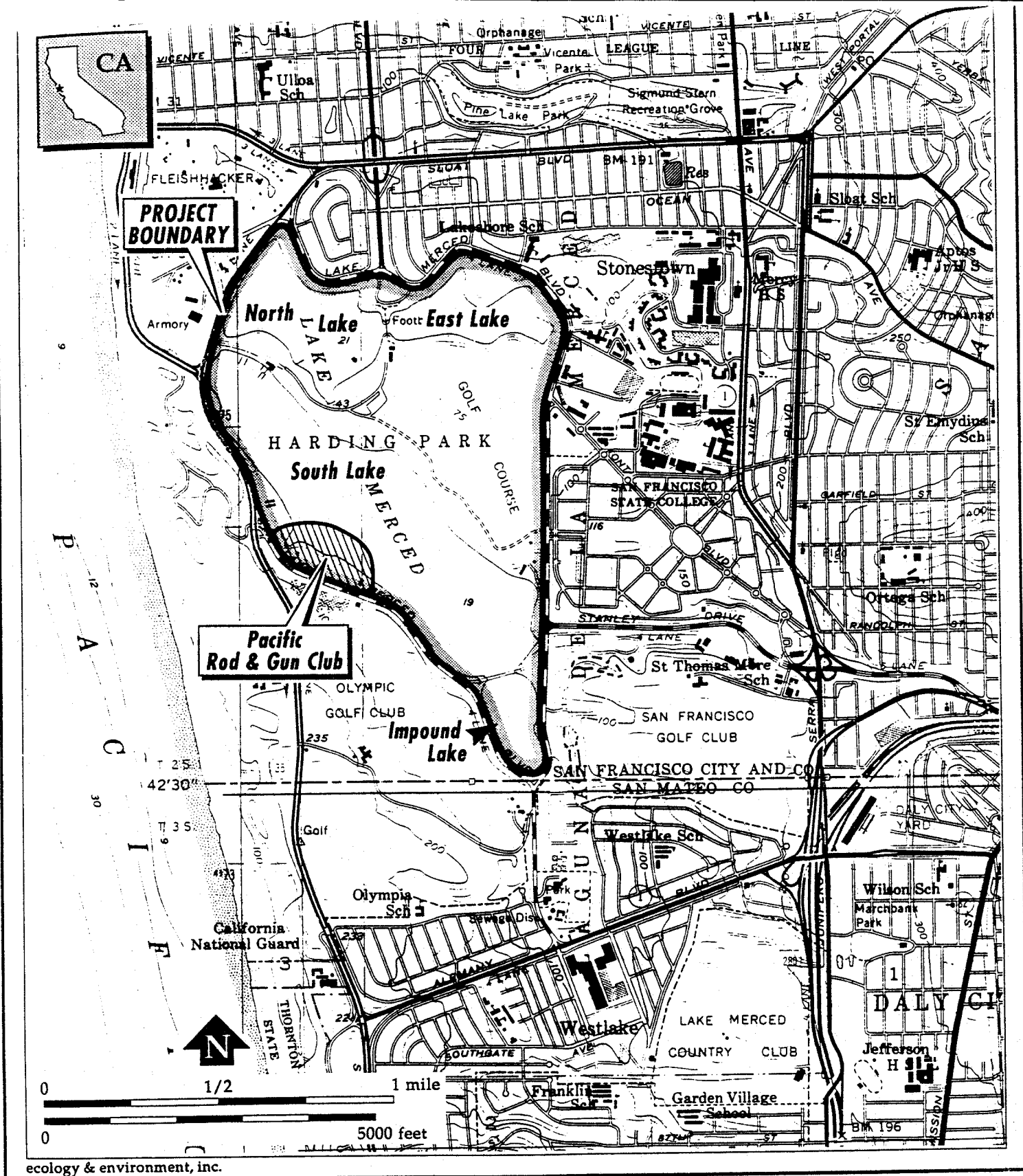


Figure 1
 -- SITE LOCATION --
 LAKE MERCED
 San Francisco Recreation and Parks Department
 San Francisco, CA